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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,396	04/15/2004	Alan S. Edelstein	ARL 03-10	6421
37064 7590 05/08/2007 OFFICE OF COMMAND COUNSEL, U.S. ARMY MATERIEL COMMAND ATTN: AMCCC-B-IP 9301 CHAPEK ROAD FORT BELVOIR, VA 22060-5527			EXAMINER BERNATZ, KEVIN M	
			ART UNIT 1773	PAPER NUMBER
			MAIL DATE 05/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,396

Applicant(s)

EDELSTEIN ET AL.

Examiner

Kevin M. Bernatz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-44 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 and 35-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 25-34 and 42-44 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 25-44 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

DETAILED ACTION

Response to Amendment

1. Cancellation of claims 1 – 13 and addition of new claims 14 - 44, filed on December 15, 2006 and March 6, 2007, have been entered in the above-identified application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Newly submitted claims 35 – 41 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: ***

The elected invention (Group I, claims 25 – 34 and 42 – 44) and the non-elected invention (Group II, claims 35 – 41) are directed to unrelated inventions. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are a magnetic information storage medium which operates by reading and writing from, for example, a magnetoresistive head (Group I) and a debit card wherein the remainder of higher permeability bilayer represents information on remaining debit opportunity (Group II), incapable of being used together with the product of Group I, and having different designs, effects and

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modes of operation from the product of Group I, *as evidenced by the separate classification of Group II under 235/493+*.

Since Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 35 – 41 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 112

4. The term "significantly" in claim 25 is a relative term which renders the claim indefinite. The term "significantly" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For purposes of evaluating the prior art, the Examiner has interpreted any difference in permeability to be "significant". The Examiner notes that this rejection can be overcome by either removing the term "significantly" or by putting in an absolute magnitude for the relative difference. As always, any amendment must find support in the as-filed disclosure.

Claim Rejections - 35 USC § 102

5. Claims 25 – 27, 30, 34 and 42 – 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Baglin et al. (U.S. Patent No. 6,331,364 B1).

Regarding claim 25, Baglin et al. disclose a magnetic information storage medium (*Title*) comprising a substrate (*Figures, element 52*), a bilayer adjacent to said substrate including superimposed layers of magnetic material and nonmagnetic material (*Figures, layer 30 – open and filled circles; and relevant disclosure thereto*), wherein the bilayer meets the claimed structural and relative permeability limitations (*Figures; col. 1, line 36 bridging col. 3, line 14; and col. 5, lines 43 – 58*).

The limitation(s) “operable to be non-erasable when exposed to a magnetic field” is (an) intended use limitation(s) and is not further limiting in so far as the structure of the product is concerned. Note that “in apparatus, article, and composition claims, intended use must result in a ***structural difference*** between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. ***If the prior art structure is capable of performing the intended use, then it meets the claim.*** In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art.” [emphasis added] *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2111.02. The Examiner notes that the structure of the Baglin et al. invention results in discrete bands or domains of magnetic and non-magnetic material (see *Figures*). While the magnetic bands/domains *can* be used to record both “1”s and “0”s (depending on the orientation of the magnetic moment), the

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magnetic band/domains can also be used simply as non-erasable data by simple detection of whether the current coordinate is magnetic or not (or hard magnetic versus soft magnetic). Such a case might be for servo tracking, where the detection of whether the current coordinate is magnetic or not would be used to tell whether the head is centered on the recording track, but the orientation of the magnetic moment within the domain would be irrelevant. As such, the Examiner deems that the disclosed structure of Baglin et al. is capable of meeting the intended use limitation since, effectively, the disclosed alternating magnetic/non-magnetic structure necessarily provides some aspect of non-erasable magnetic information to a magnetic sensor.

Regarding claim 26, Baglin et al. disclose the claimed structure (*Figures, element 30*).

Regarding claim 27, Baglin et al. disclose protective layers meeting Applicants' claimed limitations (*col. 7, lines 23 – 26*).

Regarding claim 30, Baglin et al. disclose adding Cu to the alloy (*col. 4, lines 52 – 61*).

Regarding claim 34, Baglin et al. disclose magnetic layer thickness values meeting Applicants' claimed thickness range (*col. 6, lines 34 – 56*).

Regarding the limitation(s) of claims 42 and 43, the Examiner notes that these limitation(s) are/(is a) process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is not germane to the determination of patentability of the product

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unless an unobvious difference can be shown to result from the claimed process limitations. In the instant case, Baglin et al. disclose substantially identical processes for forming the diffusion of the magnetic and nonmagnetic materials (*entire disclosure*).

Regarding claim 44, Baglin et al. disclose forming the bilayer such that it contains a plurality of magnetic and non-magnetic layers (*Figures, element 30 and relevant disclosure thereto*).

Claim Rejections - 35 USC § 103

6. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baglin et al. as applied above, and further in view of Usuki (U.S. Patent No. 6,106,895).

Baglin et al. is relied upon as described above.

Baglin et al. fail to disclose using aluminum oxide as a protective layer, only disclosing amorphous carbon.

However, the Examiner deems that amorphous carbon protective layers and aluminum oxide protective layers are known equivalents in the field of protective layers for magnetic information media, as taught by Usuki (*col. 10, lines 4 – 15*).

Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. In the instant case, amorphous carbon and aluminum oxide are equivalents in the field of protective layers for magnetic information storage. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. v. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

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7. Claims 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baglin et al. as applied above, and further in view of Fullerton et al. (U.S. Patent No. 6,383,597 B1) and/or Fullerton et al. (U.S. Patent No. 6,383,598 B1).

Baglin et al. is relied upon as described above.

Baglin et al. fail to disclose magnetic material meeting Applicants' claimed limitations.

However, Fullerton et al. (both references) teach that the magnetic material can comprise materials meeting Applicants' claimed composition limitations (*claim of either reference: e.g. Nickel*) in order to tailor the magnetic properties.

It would therefore have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the device of Baglin et al. to utilize a magnetic material meeting Applicants' claimed limitations as taught by either or both Fullerton et al. references in order to tailor the magnetic properties of the information storage medium.

8. Claims 31 – 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baglin et al. in view of Usuki as applied above, and further in view of Fullerton et al. ('597 B1) and/or Fullerton et al. ('598 B1).

Baglin et al. and Usuki are relied upon as described above.

Neither Baglin et al. nor Usuki disclose magnetic material meeting Applicants' claimed limitations.

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However, Fullerton et al. (both references) teach that the magnetic material can comprise materials meeting Applicants' claimed composition limitations (*claim of either reference: e.g. Nickel*) in order to tailor the magnetic properties.

It would therefore have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the device of Baglin et al. in view of Usuki to utilize a magnetic material meeting Applicants' claimed limitations as taught by either or both Fullerton et al. references in order to tailor the magnetic properties of the information storage medium.

Response to Arguments

9. The rejection of claims 25 – 34 and 42 - 44 under 35 U.S.C § 102(b) and/or 103(a) – Baglin et al., alone or in view of various references

Applicant(s) arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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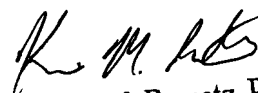
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Kevin M. Bernatz whose telephone number is (571) 272-1505. The Examiner can normally be reached on M-F, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KMB
May 4, 2007


Kevin M. Bernatz, PhD
Primary Examiner